

Unit 3: Digital imaging – plan and produce computer graphics (LEVEL 2)

Learning outcomes

By completing this unit candidates will develop a thorough knowledge of computer graphics.

Candidates will be able to:

- describe and evaluate a range of bitmap and vector images
- plan the production of graphic images for a client
- source and store components for graphic products
- record the sources of computer graphics and consider relevant legislation
- use appropriate software tools to create, edit and combine graphic images
- present work to a client for a specific purpose, using a suitable format for display.

It is anticipated that a candidate will require 60 guided learning hours to complete this unit.

Assessment objectives	Knowledge, understanding and skills
1 Describe and evaluate a range of bitmap and vector images	<p>Research images collected from existing sources, eg:</p> <ul style="list-style-type: none"> • images printed on paper (newspapers/magazines, advertisements, posters) • images printed on other surfaces (packaging, labels, signs) • images viewed on screen (digital artwork including backgrounds and buttons) • maps, diagrams, plans <p>Describe:</p> <ul style="list-style-type: none"> • audience and purpose of image • suitability for purpose • message conveyed (if any) • medium used for image • size (eg physical or file size) • effectiveness of product
2 Plan the production of graphic images for a client	<p>Describe:</p> <ul style="list-style-type: none"> • target audience • purpose/message • where the graphic will be used • size, resolution and file format • ideas from initial research • deadlines <p>Plan computer graphics eg:</p> <ul style="list-style-type: none"> • production of roughs • lines (style, thickness) • text (font, size, colour) • basic shapes • colour • component parts – resolution, size, colour mode, etc • paper size and orientation

Assessment objectives	Knowledge, understanding and skills
3 Source and store components for graphic products	<p>Sources:</p> <ul style="list-style-type: none"> • computer graphics using, eg: WWW, clip-art library (Internet or CD-ROM) • Digital camera: selecting image quality, save and transfer images onto computer, output to specified size • Scanner: select appropriate scanning software, adjust resolution, manage file size, save and transfer images onto suitable storage device <p>Store components for graphic products</p>
4 Record the sources of computer graphics and consider relevant legislation	<p>Source table for graphics used eg:</p> <ul style="list-style-type: none"> • location/source of each graphic • date of collection • file name • file size <p>Relevant legislation:</p> <ul style="list-style-type: none"> • Copyright Law (should permission be sought?)
5 Use appropriate software tools to create, edit and combine graphic images	<p>Bitmap tools, eg:</p> <ul style="list-style-type: none"> • use of selection tools • drawing/painting techniques • freehand tools • use of layers • cut, copy, crop, paste • rotate and flip • brush types and shape • colour and colour adjustment • fill and fill styles • filters • opacity/transparency • move and position layers/elements • adjust image size <p>Vector tools, eg:</p> <ul style="list-style-type: none"> • use of selection tools • geometric and freehand shapes: <ul style="list-style-type: none"> ○ circles/ellipses ○ squares/rectangles ○ polygons and pre-defined shapes • straight and curved lines • arrows/line styles • use of layers • cut, copy, crop, paste • rotate and flip • group/ungroup elements • move and position elements • alignment and order • colour, colour adjustment • stroke thickness • fill styles and gradients • shadows

(continued)

Assessment objectives	Knowledge, understanding and skills
5 Cont. Use appropriate software tools to create, edit and combine graphic images	<ul style="list-style-type: none"> • insert and manipulate text • opacity/transparency • adjust image size General <ul style="list-style-type: none"> • clear development of graphics and explanation of processes undertaken • save in appropriate file formats
6 Present work to a client for a specific purpose, using a suitable format for display	Presentation of work in a suitable format, eg: <ul style="list-style-type: none"> • portfolio • slide presentation • report folder • other Consider eg: <ul style="list-style-type: none"> • size • resolution • colour mode • medium • file types

Assessment

This unit is centre assessed and externally moderated.

In order to achieve this unit, candidates must produce a portfolio of evidence showing that they have met all of the assessment objectives.

Portfolios of work must be produced independently. They will need to be made available, together with witness statements and any other supporting documentation, to the OCR Visiting Moderator when required.

Centres must confirm to OCR that the evidence produced by candidates is authentic. An OCR Centre Authentication Form is provided in the Centre Handbook and includes a declaration for assessors to sign. It is a requirement of the QCA Common Criteria for all Qualifications that proof of authentication is received.

Guidance on assessment and evidence requirements

Assessment Objective 1 requires students to describe and evaluate a range of existing bitmap and vector images from different existing sources. Some might be found on the internet, others could be scanned or included by using a digital camera. Alternatively, candidates might simply include originals, cutting them out and including them in their portfolio of work. When collecting graphics from the different sources listed, they need only use one graphic from each.

In evaluating these graphics, candidates should focus on the audience and purpose. They can comment on the medium used and whether any particular message is conveyed (or supposed to be conveyed). Size could be the actual physical dimensions or the file size for digital graphics. Beyond Pass level, a judgement should be made as to whether the graphics are in fact suitable and effective – do they do the job they should?

Assessment Objective 2 requires candidates to plan a range of graphic images for a specified client. The number of graphics that is required depends on their complexity – candidates may need to produce two or three graphics in order to meet assessment objective 5 later on which requires candidates to use a **wide range** of vector and bitmap tools. They must specify the

purpose and audience of the graphics to be produced. Rough sketches will be required, detailing some key areas eg: lines, text, shapes, colour, component parts and paper size and orientation.

Assessment Objective 3 requires candidates to source and store components for use in their final graphic products. Candidates might use part of an existing graphic or the whole thing. In using a scanner, some candidates might draw things themselves and then scan them in order to make use of them in their final graphics. As candidates collect graphics, they should complete Assessment Objective 4 **at the same time**. Candidates must source their graphics from more than one of the listed categories; for higher grades candidates must source their graphics from **all three** categories listed.

Assessment Objective 4 requires candidates to keep a record of the source of graphics collected. These details will be stored in a source table, listing the location/source of each graphic, when it was collected, filename, file size and whether any copyright applies to it and its use. **There is no need for candidates to seek permission to use graphics.**

Assessment Objective 5 requires candidates to use a range of vector and bitmap tools to create, edit and combine graphics. As stated in Assessment Objective 2, the number of graphics they create will depend on their complexity. The list of tools provided in the knowledge, understanding and skills is by no means exhaustive. It is, however, intended that candidates use a range of tools from the list or alternatives. This is a graphics unit and simply using basic tools or basic editing tools (such as the fill tool and copy/paste) to adapt an existing graphic will **not** meet the requirements of this assessment objective.

The range of tools used will be demonstrated through evidence (in the form of screenshots) showing the development of candidate’s work. Candidates do not need to provide a screenshot of every step – they should aim to show the use of as wide a range of tools as possible, both bitmap and vector tools.

Assessment Objective 6 requires candidates to present their work for a client, using a suitable format chosen by them. This could be a digital portfolio, slide presentation or folder of work. Any suitable method can be used. Consideration of size (file size and physical size) should be considered. Beyond Pass level, candidates will need to think about file types, resolution and colour mode. At the highest level, candidates will need to justify the use of the medium they have chosen.

Signposting to Key Skills

- ✓ The unit contains opportunities for developing the Key Skill, and possibly for generating portfolio evidence, if teaching and learning is focused on that aim.

Key Skill reference		Key Skill reference		Key Skill reference	
C2.1a		ICT2.1	✓	N2.1	
C2.1b		ICT2.2	✓	N2.2	
C2.2		ICT2.3	✓	N2.3	
C2.3	✓				

Mapping to National Occupational Standards

National Occupational Standards	Reference ID	Title
IT User (e-skills UK)	ART2	Artwork and imaging software Level 2

Resources

This section provides suggestions of suitable resources. The list is neither prescriptive nor exhaustive, and candidates should be encouraged to gather information from a variety of sources. Some suggested resources are intended for Tutor use. The resources in this section were correct at the time of production.

Books

- White, R. & Downs, T. *How Computers Work*
- Meyers, M. *Michael Meyers' A+ Certification Lab Manual: Student Edition*
- Gookin, D. & Rathbone, A. *PCs for Dummies*
- Meyers, M. *Introduction to PC Hardware and Troubleshooting*

Journals/magazines

- IDG Communications *Digit*
 IDG Communications
 Computer Art

Websites

Karbo's Guide. [URL:http://www.karbosguide.com/](http://www.karbosguide.com/).
 An illustrated guide to PC hardware. This site also includes a useful dictionary of terms.

Grading

Assessment Objective	Pass	Merit	Distinction
AO1 Describe and evaluate a range of bitmap and vector images	Candidates will collect and display a range of graphics from two different sources. They will describe their purpose and will comment on the suitability of the graphics.	Candidates will collect and display a range of graphics from three different sources. They will describe their purpose and audience and discuss the suitability of the graphics. They will indicate the size of some of the graphics discussed.	Candidates will collect and display a range of graphics from three different sources. They will describe their purpose and audience and discuss the suitability of the graphics. They will also suggest the message to be conveyed (if any) and identify why they are effective (or not). They will indicate the size of most of the graphics discussed.
AO2 Plan the production of graphic images for a client	Candidates will describe the purpose and audience of graphics that are to be created. They will plan these graphics, producing rough sketches, identifying some of the key areas.	Candidates will describe the purpose and audience of graphics that are to be created. They may refer to ideas gained from the research undertaken in Assessment Objective 1. They will plan these graphics, producing rough sketches, identifying most of the key areas.	Candidates will describe the purpose and audience of graphics that are to be created. They will discuss where the graphics will be used and will identify size, resolution and file format for each. They may refer to ideas gained from the research undertaken in Assessment Objective 1. They will set deadlines for the work. They will plan these graphics, producing rough sketches, identifying all key areas.
AO3 Source and store components for graphic products	Candidates will source and store graphics from two of the listed categories. Some may not be appropriate.	Candidates will source and store graphics from three of the listed categories. Most graphics will be appropriate.	Candidates will source and store graphics from all of the listed categories. All graphics will be appropriate.
AO4 Record the sources of computer graphics and consider relevant legislation	Candidates will keep a record of computer graphics sourced and stored using a table.	Candidates will keep a detailed record of computer graphics sourced and stored using a table. This should allow others to locate some of them if required. Candidates should have awareness of Copyright Law.	Candidates will keep an accurate record of computer graphics sourced and stored using a table. This should allow others to locate most of them if required. Candidates should have an awareness of Copyright Law.

Assessment Objective	Pass	Merit	Distinction
<p>AO5 Use appropriate software tools to create, edit and combine graphic images</p>	<p>Candidates will create graphics using a limited range of vector and bitmap tools. Some development work will be demonstrated.</p>	<p>Candidates will create graphics that are fit for purpose using a range of vector and bitmap tools. Development work will be demonstrated and annotated to explain the processes undertaken. Most graphics will be saved in appropriate file formats.</p>	<p>Candidates will create graphics that are fit for purpose and audience using a wide range of vector and bitmap tools. Development work will be demonstrated and annotated to explain and justify the processes undertaken. All graphics will be saved in appropriate file formats</p>
<p>AO6 Present work to a client for a specific purpose, using a suitable format for display</p>	<p>Candidates will present work in a suitable format, with some consideration of size.</p>	<p>Candidates will present work in a suitable format, with consideration of size, resolution and file types.</p>	<p>Candidates will present work in a suitable format, with consideration of size, resolution, colour mode and file types. They will justify the use of the medium to present the graphics.</p>